Attorney Docket No. 55523-RCE (70551)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Hirotoshi Takemori, et al. EXAMINER: Ortiz Criado, Jorge L

SERIAL NO.: 09/756,493 GROUP: 2655

FILED: January 8, 2001

FOR: INTEGRATED UNIT AND OPTICAL PICKUP

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Board of Patent Appeals and Interferences
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPELLANT'S BRIEF ON APPEAL
SUBMITTED PURSUANT TO 37 C.F.R. §1.192

In support of Appellant's Notice of Appeal, dated October 25, 2005, from the Examiner's Final Rejection of the above-identified application, mailed on July 26, 2005, Appellant respectfully submits the following Appellant's Brief on Appeal.

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REAL PARTY IN INTEREST

The real party in interest is Sharp Kabushiki Kaisha, 22-22, Nagaike-Cho, Abeno-ku, Osaka-shi, Osaka, JAPAN 545-8522. An assignment from the inventor to Sharp Kabushiki Kaisha was recorded in the United States Patent and Trademark Office on 30 April 2001 at Reel 011788/ Frame 0549.

RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to Appellant, Appellant's representatives, the above-identified Assignee or the above-identified Assignee's representatives that will directly affect or be directly affected by or have a bearing on the Board's decision in this Appeal.

STATUS OF THE CLAIMS

Claims 1 and 3-11 stand finally rejected under 35 U.S.C. §103(a) and are pending on this Appeal.

STATUS OF THE AMENDMENTS

Claims 1 and 3-11 as amended on 27 April 2005 are pending in this Appeal and are reproduced in the attached Claims Appendix. No amendments that have not been entered remain outstanding in this application.

SUMMARY OF CLAIMED SUBJECT MATTER

The presently claimed invention relates to an optical pickup apparatus for optically recording information onto and reproducing information from an information storage medium, and to an integrated unit in which at least a portion of the elements of the optical pickup apparatus are integrated with one another.

More particularly, the optical pickup device of the present invention includes a laser beam source for emitting a linearly polarized laser beam, a detecting portion for detecting a reflected light, a diffraction element for diffracting the laser beam, optical elements for directing, shaping and focusing the diffracted laser beam and the reflected light, an optical compensation film and a casing accommodating the laser beam source and the detecting portion. The diffraction element and the laser beam source are accommodated with one another in a casing, and that casing is integrated with the other elements so as to form an integrated unit.

The integration of the optical compensation film into the integrated unit is generally accomplished either by attaching the optical compensation film to a surface of one of the other optical components of the apparatus extending across the optical paths of the laser beam and its reflection from the storage medium, or by encasing the optical compensation film within the diffraction element such that it extends across the optical paths of the laser beam and its reflection from the storage medium; or by attaching he optical compensation film to the casing so as to extend across the optical paths of the laser beam and its reflection from the storage medium.

The optical compensation film of the presently claimed invention is transparent and is formed of a polyolefin-type polymer. More specifically, the optical compensation film of the present invention is a single layer film that results from subjecting a single layer polyolefin-type polymer film characterized by an original film index ellipsoid to high accuracy uniaxial or biaxial stretching so as to change the first film index ellipsoid into a different film index ellipsoid.

The resulting optical compensation film has anisotropic properties that are capable of changing light passing therethrough from a linearly polarized input light to a circularly or elliptically polarized output light and *vice versa.* In a particular embodiment, if the planar refractive indices of the film are represented by n_x and n_y, and the refractive index of the film is represented by n_z, the optical compensation film is characterized in that $n_x > n_y \geq n_z$ (see, present specification at page 5, lines 16-31, and Fig. 12). The optical compensation film of the present invention improves the contrast of and reduces color changes present liquid crystal panels, avoids wavefront aberrations, improves asymmetry and jitter phenomena in the case of RF transmission signal measurement and generally allows optimal reflected light properties to be obtained from optical disks – even optical disks evidencing high birefringence effects in the light reflected thereform.

In typical operation, the laser beam source emits a beam of linearly polarized laser light that passes through the optical compensation film, the diffraction element and at least an objective lens so as form a spot impinging upon the surface of an optical disk. Upon the laser beam's passage through the compensation film its original linear polarization is changed to a circular or elliptical polarization. Thereafter, when the incoming circularly or elliptically polarized light is reflected by the optical disk the nature of its polarization is reversed. The result of this is that birefringence (distortion) introduced by such factors as the pits on the surface of the optical disk in one direction substantially parallel to the optical disk surface is not carried all the way back to the detection element by the reflected beam. Also, the directional characteristics of the outgoing light beam may be separated from those of the reflected beam. These results, and others, are made possible because the compensation film converts the reflected circularly or elliptically reversed polarized light to a linearly polarized light having a characteristic axis of polarization different from that of the polarized light originally emitted from the laser beam source.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The present Appeal seeks review of the Examiner's final rejection of Claims 1 and 3-11 currently pending in the present application as being unpatentable under 35 U.S.C. § 103(a) over the Kay, et al reference (U.S Patent No. 5,544,143) in combination with the Nakao, et al reference (U.S. Patent No. 6,272,097) and further in view of the Mori et al. reference (U.S. Patent No. 4,400,062).

In particular, the present Appeal seeks a review of the technical accuracy and legal sufficiency of the Examiner's conclusions (quoted below) that (1) the Kay, et al reference and/or the Nakao, et al reference teach, disclose or suggest the use of an optical compensation ***film*** in an optical pickup apparatus, and (2) the addition of the disclosure of the Mori, et al reference to the combination of the Kay, et al and Nakao, et al references renders the claims of the present application unpatentable within the terms of 35 USC 103(a).

With respect to the first of these conclusions, the Examiner states:

> Kay, et al discloses an integrated unit comprising:.....
> a transparent optical compensation film being formed integrally with one of said optical elements or with said casing so as to be disposed in said optical pathways defined by said emitted laser beam and said reflection thereof
> Kay et al further teaches wherein the light could have other circular or other polarizations by another optical compensation element included in the pathways of the optical elements (*citations omitted*)
> (Official Action of 26 July 2005, page 3, first and second paragraphs)

In addition, the Examiner states:

> However, this feature (*a circularization of linearly polarized light passing through a compensation element)* is well known in the art as evidenced by Nakao, et al., which discloses an integrated unit having an optical single layer compensation film formed integrally with other optical elements.....
> (Official Action of 26 July 2005, page 3, fourth paragraph).

With respect to the second of the above conclusions, the Examiner states:

> "But Kay et al. in combination with Nakao et al does not expressly disclose that the compensation film comprises a uniaxially-stretched or biaxially-stretched polyolefin-type polymer film.
> "However, this feature is well known in the art as evidenced by Mori, et al., which discloses compensation element included in the pathways of the optical elements of an optical pickup comprising a compensation film uniaxially-stretched or biaxially-stretched **single layer** polyolefin-type polymer film characterized by ("a first type of film index ellipsoid/ uniaxially or biaxially stretched"), said **single layer** polyolefin-type polymer film characterized by said first type of film index ellipsoid having been formed by uniaxially stretched or biaxially stretching a polyolefin-type polymer film characterized by a film index ellipsoid of a different type from said first type of film index ellipsoid such that said film index ellipsoid of said different type from said first type of film index ellipsoid is changed into said first type of said film index ellipsoid by said stretching", **function of changing polarization state of the laser beam** (See col. 1, line 10 to col.2, line 51; col. 3, line 42 to col. 4, line 43)
> (Official Action of 26 July 2005, paragraph bridging pages 7 and 8)

> "Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to include a compensation film of high polymer film in order **to effectively obtain the function of changing the polarization state of the laser beam entering the optical storage medium**, as taught by Mori et al."
> (Official Action dated 26 July 2005, page 10, fourth paragraphs)

See also, the Examiner's comments at pages 11 and 12 of the Official Action dated 26 July 2005 wherein in response to Appellant's previous argument he states:

> "In regard to claims 1, 10 and 11 applicants argue that Mori, et al does not disclose, teach or suggest polyolefin-type polymer film can be made to function as a wave plate by uniaxial or biaxial stretching.
> "The Examiner disagrees with the applicant assertion because Mori et al clearly discloses having an uniaxially stretched **wavelength plate** of "polyolefin-type polymer film (see Col. 1 line 10 to col.2, line 51)"

and

"Applicant argues that the amendment **make it clear** that **only a single** polymer film is contemplated by the present invention, not the stacked structure of Mori, et al
"The examiner cannot concur because Mori et al teaches the an uniaxially or biaxially stretched **wavelength plate** of **only a single** polyolefin-type polymer film (see col. 1, lines 22-48)"

and

"Applicant argues specifying in the amendment that the polyolefin-type polymer film as claimed is a film wherein the original film index ellipsoid type has been changed into a different ellipsoid type by uniaxially or biaxially stretching clearly the film claimed is not the same as the manufactured film of Mori et al
"The examiner cannot concur because the index ellipsoid is merely the result of uniaxially or biaxially **stretching** also as acknowledged by Applicant (see page 11 of response filed 11/10/2004) as taught by Mori et al (see cited parts)
.....
"The patentability of the final product in a "product-by-process' claim must be determined **by the product itself** and **not the actual process** and an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or not."

ARGUMENTS

I. INTRODUCTION

Appellant's position in this Appeal is three-fold. First, Appellant respectfully submits that the Examiner's interpretation of the Kay, et al and Nakao, et al references as evidenced by the above-quoted portions of his remarks in support of the currently outstanding final rejections of the present application is technically in error. Second, Appellant respectfully submits that the Examiner's interpretation of the Mori, et al references as evidenced by the above-quoted portions of his remarks in support of the currently outstanding final rejections of the present application is technically in error. Third, Appellant respectfully submits that a correct technical interpretation of the Mori, et al reference taken in view of the Kaye, e al and Nakao et al references would not reasonably lead one skilled in the art to the present invention under the appropriate standards for a determination of patentability under 35 USC 103(a).

In the following sections, Appellant presents a summary of the standards for the establishment and review of obviousness rejections under 35 USC 103(a), a summary of the correct technical interpretation of the Mori, et al reference, and Appellant's rebuttal of the Examiner's Stated Grounds for rejection of the claims of this application.

II. STANDARDS FOR ESTABLISHING AND REVIEWING AN OBVIOUSNESS REJECTION UNDER 35 USC §103.

The Court of Appeals for the Federal Circuit has specified the manner in which obviousness rejections are to be reviewed. In particular, it has been held that where claimed subject matter has been rejected as obvious in view of a combination of prior art references, "a proper analysis under section 103 requires, inter alia, consideration of two factors: (1) whether the prior art would have suggested to those of ordinary skill in the art that they should make the claimed composition or device, or carry out the claimed process; and (2) whether the prior art would also have revealed that in so making or carrying out, those of ordinary skill would have a reasonable expectation of success." In re Vaeck, 947 F.2d 488, 493, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991), cited In re Dow Chemical Co., 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). The Court of Appeals for the Federal Circuit has emphasized the foregoing by succinctly summarizing: "Both the suggestion and the reasonable expectation of success must be founded in the prior art, not the Applicants' disclosure." Id. See also In re Merck & Co., Inc., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). More recently, the case law regarding 35 U.S.C. §103 was again reviewed to the same effect. See In re Sang-Su Lee 277 F.3d 1388, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002).

Further, it has been held that that "[A] patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 USC 103". *In re Spaonnoble*, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA, 1969) MPEP Sec 2141.02 (p. 2100, 125). In addition, it is inherent in the foregoing discussion that "[T]he mere fact that the references ***can*** be combined or modified does not render the resultant combination obvious unless the prior art also **suggests the desirability** of the combination." *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) MPEP 2143 p2100-131 (Emphasis added)

Finally, the Manual of Patent Examining Procedure sets forth the standards for the establishment of the *prima facie* case of obviousness that an Examiner is required to establish in support of all rejections under 35 USC 103(a) as follows:

> To establish a *prima facie* case of obviousness under Section 103, Title 35 United States Code (35 USC §103), three basic criteria must be met. First, ***there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings***. Second, there must be a reasonable expectation of success. Finally, ***the prior art reference (or references when combined) must teach or suggest all of the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicants' disclosure***. *In re Vaeck*, 947 F.2d 488, 20 USPQ2D 1438 (Fed. Cir. 1991). (See, Manual of Patent Examining Procedure §2142 (8th Edition), at page 2100-2121, *et seq.*) *Emphasis added*

III. SUMMARY OF MORI, ET AL (US Patent 4,400,062)

The Mori, et al patent (US 4,400,062) relates to a composite waveplate retarder (compensation film) that consists of a stacked plurality of doubly refracting or birefringent high molecular films each having a single optical axis parallel to the plane of the film in the direction of its elongation. These films are laminated together with the angle(s) formed between their respective optical axes so established that a desired phase difference between ordinary and extraordinary components of a linearly polarized light beam are achieved during the transmission of the light beam therethrough.

More particularly, in the Background section of the Mori et al patent it is disclosed that high molecular films such as polypropylene may be elongated by being stretched during manufacture on an elongation roller so as to have an optical axis that is aligned with the longitudinal direction of the stretching forces applied to the film (i.e., uniaxially stretched). Further, it is disclosed that such elongated films evidence birefringent properties.

In addition, it is disclosed generally in Mori, et al. (i.e., not necessarily with regard to the elongated films discussed) that if a high molecular film could be made uniformly thick enough, it could be made to function as ¼ or ½ wavelength plate (i.e., as an element creating a 90^{o} or 180^{o} difference in phase between the ordinary and extraordinary components of incoming light so as to "circularize" the output light). In addition, at Column 1, lines 49-60, the Mori et al patent specifically indicates that it is difficult to control the thickness of high molecular films accurately enough to use them as ¼ or ½ wavelength plates. Still further, Mori, et al indicates that even if the thickness problem regarding high molecular films could be overcome or controlled, the birefringence properties of such films are so non-uniform due to unavoidable differences in their composition and conditions arising during their manufacture from manufacturing lot to manufacturing lot that it is difficult (if not impossible) to create high molecular films such that they will impart a desired phase difference between normal and extraordinary light passing through them.

Accordingly, Appellant respectfully submits that the Mori et al patent teaches, discloses and suggests that due to the inherent problems associated therewith, the use of uniaxially stretched films created during (or immediately after) film manufacture by stretching the newly manufactured film on elongation rolls individually (i.e., singly) as compensation elements suitable for use in optical pickup devices of the type herein claimed is contra-indicated in the art. **In addition, Mori et al at no point and in no manner teaches, discloses or suggests that the initially uniaxially stretched films discussed in the Background section of his patent could, or should, be further uniaxially or biaxially stretched for any purpose.**

What Mori et al discovered (and teach, disclose and/or suggest to the art), therefore, is that the manufactured uniaxially stretched films discussed above and in the Background section of the reference patent document could be utilized successfully in ¼ or ½ waveplate retarders for circularizing linearly polarized light passing therethrough if the retartder (waveplate) was formed as a composite structure including multiple layers of the uniaxially stretched film stacked one upon the other with the angle(s) between the respective optical axes of adjacent film layers controlled so as to provide a desired ¼ or ½ wavelength retardation between normal and extraordinary light passing through the composite stacked layered structure.

Accordingly, Mori, et al teaches, discloses and/or suggests only the uniaxial stretching of a high molecular film having essentially no film index ellipsoid (i.e., a substantially amorphous starting molecular structure) immediately after its manufacture by the use of an elongation roll, and thereafter utilizing stacked pieces cut from the film so formed with their respective optical axes set at angles to one another so as to create a composite compensation film evidencing the desired circularizing effect upon input linearly polarized light. In other words, **the Mori et al patent discloses a composite film structure that serves the function of, but is not structurally the same as, the presently claimed single layer high molecular film having an initial film index ellipsoid that has been uniaxially or biaxially stretched so as to alter its initial film index ellipsoid to a different film index ellipsoid film structure.**

IV. APPELLANT'S REBUTTAL OF EXAMINER'S GROUNDS FOR REJECTION

The Examiner has finally rejected claims 1 and 3-11 of the present application under 35 USC §103(a) as being unpatentable over Kay et al. (US Patent No. 5,544,143) in combination with Nakao et al. (US Patent No. 6,272,097) and further in view of Mori et al. (US Patent No. 4,400,062). In the course of that rejection, the Examiner has conceded that the Kay et al and Nakao et al references whether taken alone, or in combination with one another, are insufficient to support a rejection of the claims of this application. In particular, the Examiner concedes that the Kay et al and Nakao et al references do not disclose all of the elements of the present claims (i.e., neither reference expressly discloses a compensation film in the context of the other elements claims comprising a unixaially or biaxially stretched polyolefin-type polymer film). Appellant agrees, and respectfully further notes that not only do the Kay et al and Nakao et al reference fail to disclose a uniaxially stretched or biaxially stretched polyolefin-type polymer compensation film, but also neither of those references teaches, discloses or suggests the use of a compensation film in an optical pickup device such as that herein claimed at all, much less an optical compensation film comprising a polyolefin-type polymer film having a film index ellipsoid that has been uniaxially or biaxially stretched so as to create a polyolefin-type polymer compensation film having a different film index ellipsoid that circularizes the polarization of light passing therethrough as herein claimed.

Thus, the Examiner has argued that the Kay, et al reference discloses a transparent optical element designated by reference numeral 34 that may be integrated with a grating beam splitter designated by the reference numeral 44. Appellant does not disagree with that construction of the Kay, et al reference. Appellant, however, strenuously disagrees with the proposition that the element 34 of the Kay reference is, or may be properly characterized as, an optical compensation film as contemplated by the present specification and claims. **There is absolutely no teaching, disclosure or suggestion anywhere in the Kay, et al. reference that the transparent substrate 34 is contemplated to be an optical compensation film or for that matter to in any way evidence a compensation function.**

In this regard, Appellant respectfully calls attention to the fact that Kay, et al. define their "transparent substrate" as "any transparent material, including glass, plastic or film which may be used to support a grating beam splitter formed therein or thereon (see Column 5, lines 31-34) without any indication whatsoever that that "transparent substrate" is to function as a compensation film useful in overcoming the birefringence effects of a target optical disk. Indeed, while Kay, et al. realize that so-called circularization of the laser beam generally is known to be beneficial (see, column 2, lines 9-14), they nevertheless never indicate that their transparent substrate 34 is to demonstrate compensation effects. The only statement concerning the optical effects of the Kay, et al. transparent substrate of which Applicants are currently aware states: "(a) zeroth order diffraction component of the radiation beam passes ***undeflected*** through the transparent substrate 34 and the grating splitter 42 formed thereon and is collimated by the collimating lens 44". (See, Kay, et al., Column 4, lines 54-58).

Accordingly, Appellant respectfully submits that as far as Kay, et al. are concerned, such compensation effects as are to be accomplished in their system are to be achieved by **a separate lens supported by mounting means separate from the remainder of the apparatus** (See, Kay, et al., Column 3, lines 42-45; Column 4, line 64 to Column 5, line 2; Column 10, line 59 to Column 11, line 16; and Claim 11; among other locations within the Kay, et al. reference). This lens is stated to impart desirable circularity to the laser beam and thereby to "improve throughput efficiency". (See, Kay, et al., Column 3, lines 41-44) Hence, Appellants respectfully submit that Kaye, et al. simply do not teach, disclose or suggest the use of any compensation films in optical pickup apparatus *per se*, nor do they teach, disclose or suggest that a compensation film integrated with another element of the device will accomplish the required compensation function with fewer components in a smaller unit with less required adjustment as taught by the present invention.

The Nakao, et al reference, on the other hand, discloses a compensation layer 7 integrated with the other elements of an optical pickup apparatus (i.e., formed on the transparent substrate 6) that "may be produced by means of various conventional techniques such as growth of anisotrophic optical crystal like niobic acid lithium as controlling the crystalline axis or use of a monoplate or pasted crystalline plates as with the case of creating the normal quarter wave plate'. (see Nakao, et al, Col 5, lines 33-39) Hence, while in Nakao et al the compensation element is moved from outside the "integrated unit" as in Kay et al into the "integrated unit" therein disclosed, there remains no clear indication in either Kay et al or Nakao et al that the compensation element is, or could be or should be, a film, much less a compensation film as herein claimed.

Therefore, the primary issue in this Appeal is whether or not the addition of the Mori reference's disclosure to those of the Kay, et al and Nakao, et al references are sufficient to support the Examiner's rejections, i.e., to teach, disclose or suggest to those skilled in the art as of the time of the present invention the use of a compensation film instead of the lens suggested by Kay et al or the structure described by Nakao et al. in an optical pickup of the type herein claimed, and if so, to teach, disclose or suggest the particular compensation film herein claimed.

In this regard, the Examiner has concluded that the cited Mori reference is sufficient to suggest the substitution of a compensation film for the compensation elements disclosed by Kay et al and Nakao et al, and further that Mori et al discloses a "single layer polyolefin-type polymer film characterized by a first type of film index ellipsoid, said polyolefin-type polymer film characterized by said first type of film index ellipsoid having been formed by uniaxially stretching or biaxially stretching a polyolefin-type polymer film characterized by a film index ellipsoid of a different type from said first type of film index ellipsoid such that said film index ellipsoid of said different type from said first type of film index ellipsoid is changed into said first type of film index ellipsoid by said stretching" as herein claimed. Appellant respectfully disagrees with at least the latter conclusion of the Examiner and requests that the Examiner's holding in this regard be overruled on this Appeal.

In the latter regard, Appellant respectfully submits that since the claimed polyolefin-type polymer film is specifically claimed to be a single layer structure wherein an original film ellipsoid type has been changed into a different film ellipsoid type by uniaxial or biaxial stretching, the presently pending claims of this application themselves clearly and definitely indicate that the film presently claimed is not the same structurally or functionally as the manufactured film subsequent uniaxial stretching discussed in the Mori, et al reference.

More particularly, as generally discussed above, the Mori, et al film is disclosed as being stretched ***by an elongation roll during manufacture***. Appellant respectfully submits that this is simply a teaching, disclosure and/or suggestion that as the film is formed it is taken up onto an elongation roller. Consequently, the very act of taking the film up onto the elongation roller directly from the manufacturing operation acts to provide the film with a well defined film ellipsoid type ***prior to the completion of its manufacture*** in a situation wherein the manufactured film would not otherwise have a well defined film index ellipsoid (i.e., any film index ellipsoid of the manufactured but not stretched film would be a chance result of an otherwise amorphous molecular distribution of a material, characterized as "birefringent" by Mori, et al, within the film). ***Further, the Mori et al film that has been uniaxially stretched by the elongation roller is specifically indicated by Mori, et al to be unsuitable for use as a compensation film in an optical pickup device wherein a circularization of incoming linearly polarized light beam is required***. Instead, Mori et al discloses that the uniaxially stretched film can be utilized as a compensation film in an optical pickup device such as that herein claimed only if the film is cut into pieces which are then stacked one atop the other with the optical axis of the respective layers oriented at angles to one another resulting in the circularizing effects on incoming linearly polarized light that are desired.

Accordingly, Appellant respectfully submits that the film utilized by Mori, et al in the fabrication of his ***stacked*** waveplate structure is composed of ***a plurality of layers of film*** that have only the "different type" film index ellipsoid type (i.e., the as manufactured type, that is "starting type", of film index ellipsoid referred to in the claims of this application). In other words, the Mori film is given a film ellipsoid type during its manufacture that corresponds to the film ellipsoid type of the claimed film ***prior to the subsequent uniaxial or biaxial stretching presently claimed for the purpose of changing the original film ellipsoid type (the "different" ellipsoid type) to another film ellipsoid type (the claimed "first" film ellipsoid type)***. There is no indication in Mori et al that tends to teach, disclose or suggest that the initially uniaxially stretched film should be subjected to any further stretching whether such be uniaxial or biaxial. In addition, Appellant respectfully submits that it is unambiguously clear that if the Mori et al film were to be subjected to further stretching as herein claimed its molecular structure would not be the same as that of the Mori et al composite stacked compensation film structure.

On the other hand, Appellant respectfully submits that the present claims of this application make it specifically clear that **only a single polyolefin-type polymer film is contemplated by the present invention, not a stacked structure composed of two or more film layers as proposed by Mori, et al**. Further, by specifying that the polyolefin-type polymer film herein claimed is a film wherein an original defined film ellipsoid type has been changed into a different defined film ellipsoid type by uniaxial or biaxial stretching, Appellants have clearly and distinctly set forth the metes and bounds of their invention in such a way that there is absolutely no question that the presently claimed compensation film is not, and cannot be interpreted to be, the same as the manufactured film prior to subsequent stretching discussed in the Mori, et al reference. In fact, not only is the uniaxially stretched film discussed by the Mori et al reference outside of the scope of the present claims, but further stretching of that film is contra-indicated by the Mori et al reference itself.

The latter conclusion arises from the fact alluded to above that further stretching of the uniaxially stretched Mari, et al film (perhaps with the exception of uniaxial stretching in the same direction as the original stretching) would probably be expected by those skilled in that art to alter the internal molecular orientation of the film material in a manner not contemplated or intended by Mori, et al. In other words, any further stretching of the Mori et al film will introduce uncertainty as to the disposition of the optical axes of the various pieces of film utilized in the formation of the composite optical compensation film disclosed by that patent. Such uncertainty as to the location of the optical axis within the plane of the film pieces (and/or the deflection of the optical axis out of the plane of the film, and/or the creation of two optical axes) all are beyond the scope of the teachings of the Mori et al reference, but within the scope of the present claims so long as the single layer compensation film exhibiting the desired properties is created by the stretching of the starting film.

Consequently, since none of the cited references discloses, teaches or suggests a transparent optical compensation film comprising a uniaxially-stretched or biaxially-stretched polyolefin-type polymer film formed from a polyolefin-type polymer film having an initial film index ellipsoid as herein claimed, Applicants respectfully submit that Claims 1, 10 and 11, as well as the claims that depend either directly or indirectly from Claim 1, are in condition for allowance.

Finally, the Examiner's product-by-process argument to the effect that the claim must be determined by the product itself and not the actual process and that an old product produced by a new method is not patentable whether claimed in "product by process" claims or not is generally well taken. The problem with the Examiner's position on this Appeal, however, is that as demonstrated above none of the presently cited art discloses a ***single layer*** compensation ***film*** that has the same properties as the presently claimed single layer compensation film integrated into an optical pickup device.

The Examiner concedes that neither the Kay et al nor the Nakao et al references disclose, teach or suggest the claimed compensation film, and the foregoing discussion of the Mori, et al reference definitively indicates that to the extent that a single layer polyolefin-type polymer film is disclosed therein, that film does not meet the terms of the present claims as the Examiner has alleged. In other words, Mori et al requires a stacked composite film with the optical axes of the various layers disposed at specific angles to one another in order to achieve a result similar to that achieved by the present invention with a single layer film formed in the manner claimed (i.e., a transparent optical compensation film that circularizes the polarization of light passing therethrough).

Thus, neither the Kay et al reference nor the Nakao et al reference nor any combination thereof teaches, discloses or suggests the presently claimed structure even without the specifics of the presently claimed compensation film. In addition, contrary to the Examiner's assertions, the Mori et al reference while disclosing a single layer film that is uniaxially stretched and exhibits birefringent properties, does not teach, disclose or suggest the claimed single layer film but instead utilizes a multilayer stacked film with the optical axes of the layers disposed at set angles to one another in order to achieve the results of the single layer compensation film herein claimed. Therefore, neither the product itself (the claimed single layer film having the properties claimed) nor the method of making it are taught, disclosed or suggested in the art.

The simple fact of the matter is that the Kay et al reference basically teaches an optical pickup device wherein the compensation feature herein discussed (the conversion of linear polarization to circularized polarization) is provided by a lens that is separate from the remained of the device separately mounted in the optical pathway between the pickup device and the medium to be read or recorded. The Nakao et al reference provides a suggestion to move thecompensation lens of Kay et al into the optical pickup device. The Mori et al reference then provides the suggestion that the compensation element can be a compensation film mounted on one of the other elements of the pickup device in a manner analogous to the mounting of the compensation element in the Nakao et al reference.

At this point, however, the Examiner's case breaks down because neither the uniaxially stretched film disclosed in the Background portion of the Mori et al reference nor the composite film that is the subject of the Mori et al invention are adequate to teach, disclose or suggest the presently claimed compensation film for the reasons discussed at length hereinabove. Hence, the Examiner has failed to establish the requisite *prima facie* case necessary to support his currently outstanding rejections of the claims of this application.

CONCLUSION

Appellant respectfully submits that the foregoing remarks totally and definitively overcome the Examiner's obviousness rejections under 35 USC 103(a) as presented in the currently outstanding FINAL Official Action in the view of all the facts and argument of record herein. The "bottom line" is that the Examiner consistently has attributed disclosure to the art that he has applied against the claims of this application that is not actually present therein, and absent those erroneous determinations concerning the content of the prior art currently of record in this application the Examiner could not have reasonably reached the conclusion that one of ordinary skill in this art would have been lead to the present invention by that art. Consequently, Appellant respectfully submits that the instant invention is both novel and unobvious over the combination of art relied upon by the Examiner, and respectfully requests a decision so holding on this Appeal.

Finally, although it is not believed that the present submission requires any further fee to secure its consideration by the Office, the Examiner or other appropriate officer of the United Sates Patent and Trademark Office hereby is authorized to any charge such fee that may be deemed to be due, appropriate or otherwise required, or to credit any overpayment, to the deposit account of the undersigned, Deposit Account 04-1105 .

Respectfully submitted,

Date: December 15, 2005 By: _____

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CLAIMS APPENDIX

Claims 1 and 3-11 on Appeal

1. An integrated unit, comprising:

a laser beam source for emitting a laser beam;

a detecting portion for detecting reflection of said emitted laser beam;

optical elements for controlling the pathways defined by said emitted laser beam and said reflection thereof, said optical elements including at least a diffraction element for diffracting said emitted laser beam and said reflection thereof;

a casing accommodating said laser beam source and said detecting portion; and

a transparent optical compensation film for circularizing the polarization of light passing therethrough such that light exiting therefrom is circularly or elliptically polarized, said transparent optical compensation film (i) comprising a single layer polyolefin-type polymer film characterized by a first type of film index ellipsoid, said single layer polyolefin-type polymer film characterized by said first type of film index ellipsoid having been formed by uniaxially stretching or biaxially stretching a single layer polyolefin-type polymer film characterized by a film index ellipsoid of a different type from said first type of film index ellipsoid such that said film index ellipsoid of said different type from said first type of film index ellipsoid is changed into said first type of film index ellipsoid by said uniaxial or biaxial stretching, and (ii) being formed integrally with one of said optical elements or with an end of said casing so as to be disposed in said optical pathways defined by said emitted laser beam and said reflection thereof.

2. (Cancelled, without prejudice)

3. The integrated unit according to claim 1, wherein
said optical compensation film is attached onto said diffraction element.

4. The integrated unit according to claim 1, including said optical compensation film inside said diffraction element.

5. The integrated unit according to claim 1, wherein
said casing and said optical compensation film are integrated.

6. The integrated unit according to claim 1, including a cap member, provided to said casing, for closing an opening.

7. The integrated unit according to claim 6, wherein said cap member and an optical compensation film are integrated.

8. The integrated unit according to claim 3, wherein
said diffraction element has a diffraction pattern for diffracting a laser beam, said diffraction pattern being formed on said optical compensation film.

9. The integrated unit according to claim 3, wherein
said diffraction element has a diffraction pattern for diffracting a laser beam, said optical compensation film being formed on said diffraction pattern.

10 An optical pickup for reading information on an optical disk by condensing a laser beam onto the optical disk, comprising:

a laser beam source for emitting a laser beam;

a detecting portion for detecting reflection of said emitted laser beam;

optical elements for controlling the pathways defined by said emitted laser beam and said reflection thereof, said optical elements including at least a diffraction element for diffracting said emitted laser beam and said reflection thereof;

a casing accommodating said laser beam source and said detecting portion;

an integrated unit in which said diffraction element and said casing are integrated;

an objective lens for condensing the laser beam onto the optical disk; and

a transparent optical compensation film for circularizing the polarization of light passing therethrough such that light exiting therefrom is circularly or elliptically polarized, said transparent optical compensation film (i) comprising a single layer polyolefin-type polymer film characterized by a first type of film index ellipsoid, said single layer polyolefin-type polymer film characterized by said first type of film index ellipsoid having been formed by uniaxially stretching or biaxially stretching a single layer polyolefin-type polymer film characterized by a film index ellipsoid of a different type from said first type of film index ellipsoid such that said film index ellipsoid of said different type from said first type of film index ellipsoid is changed into said first type of film index ellipsoid by said uniaxial or biaxial stretching, and (ii) being formed integrally with one of said optical elements or with an end of said casing so as to be disposed in said optical pathways defined by said emitted laser beam and said reflection thereof.

11. An optical pickup for reading information recorded on an optical disk by condensing a laser beam onto the optical disk, comprising:

a laser beam source for emitting a laser beam;

a detecting portion for detecting a reflected light;

a diffraction element for diffracting the laser beam;

a casing accommodating said laser beam source and said detecting portion;

an integrated unit in which said diffraction element and said casing are integrated;

an objective lens for condensing the laser beam onto the optical disk; and

a reflection mirror for changing a direction of the laser beam;

wherein said reflection mirror is integrated with a transparent optical compensation film, said transparent optical compensation film (i) comprising a single layer polyolefin-type polymer film characterized by a first type of film index ellipsoid, said single layer polyolefin-type polymer film characterized by said first type of film index ellipsoid having been formed by uniaxially stretching or biaxially stretching a single layer polyolefin-type polymer film characterized by a film index ellipsoid of a different type from said first type of film index ellipsoid such that said film index ellipsoid of said different type from said first type of film index ellipsoid is changed into said first type of film index ellipsoid by said uniaxial or biaxial stretching, and (ii) being adapted to circularize the polarization of light passing therethrough such that light exiting therefrom is circularly or elliptically polarized.

12-19-05

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TRANSMITTAL OF APPEAL BRIEF

Docket No.
55523-RCE (70551)

In re Application of: Hirotoshi Takemori et al.

Application No.	Filing Date	Examiner	Group Art Unit
09/756,493-Conf. #4293	January 8, 2001	Ortiz Criado, Jorge L.	2655

Invention: INTEGRATED UNIT AND OPTICAL PICKUP

TO THE COMMISSIONER OF PATENTS:

Transmitted herewith is the Appeal Brief in this application, with respect to the Notice of Appeal filed: October 25, 2005 .

The fee for filing this Appeal Brief is $ 500.00 .

[X] Large Entity [ ] Small Entity

[ ] A petition for extension of time is also enclosed.

The fee for the extension of time is _____ .

[ ] A check in the amount of _____ is enclosed.

[X] Charge the amount of the fee to Deposit Account No. 04-1105 .
This sheet is submitted in duplicate.

[ ] Payment by credit card. Form PTO-2038 is attached.

[X] The Director is hereby authorized to charge any additional fees that may be required or credit any overpayment to Deposit Account No. 04-1105 .
This sheet is submitted in duplicate.

David A. Tucker

Dated: December 15, 2005

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PTO/SB/17 (12-04v2)
Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Effective on 12/08/2004.
Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL
For FY 2005

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 500.00

Complete if Known	
Application Number	09/756,493-Conf. #4293
Filing Date	January 8, 2001
First Named Inventor	Hirotoshi Takemori, et al.
Examiner Name	Ortiz Criado, Jorge L.
Art Unit	2655
Attorney Docket No.	**55523-RCE (70551)**

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 04-1105 Deposit Account Name: Edwards Angell Palmer & Dodge LLP

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, **except for the filing fee**

☒ Charge any additional fee(s) or underpayment of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

	FILING FEES		SEARCH FEES		EXAMINATION FEES		
Application Type	**Fee ($)**	**Small Entity Fee ($)**	**Fee ($)**	**Small Entity Fee ($)**	**Fee ($)**	**Small Entity Fee ($)**	**Fees Paid ($)**
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	**Fee ($)**	**Small Entity Fee ($)**
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180

Total Claims		**Extra Claims**	**Fee ($)**		**Fee Paid ($)**
_____	- 20 =	_____	x _____	=	_____

Multiple Dependent Claims

Fee ($)	**Fee Paid ($)**

Indep. Claims		**Extra Claims**	**Fee ($)**		**Fee Paid ($)**
_____	- 3 =	_____	x _____	=	_____

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is $250 ($125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets		**Extra Sheets**		**Number of each additional 50 or fraction thereof**	**Fee ($)**	**Fee Paid ($)**
_____	- 100 =	_____	/50	_____ (round up to a whole number) x	_____	= _____

4. OTHER FEE(S) **Fees Paid ($)**

Non-English Specification, $130 fee (no small entity discount)

Other (e.g., late filing surcharge): 1402 Filing a brief in support of an appeal 500.00

SUBMITTED BY

Signature	David A. Tucker	Registration No. (Attorney/Agent)	27,840	Telephone	(617) 517-5508
Name (Print/Type)	David A. Tucker			Date	December 15, 2005

Application No. (if known): 09/756,493 Attorney Docket No.: **55523-RCE (70551)**

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